

# WATER QUALITY REPORT

FOR BLOOMINGTON, MN • 2004 TEST RESULTS



JUNE 2005

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## EVERY DROP IS SAFE

### BLOOMINGTON’S DRINKING WATER SURPASSED ALL REQUIREMENTS



The remodeled Water Treatment Plant is now able to produce fourteen million gallons of treated, drinkable water per day – twice its previous capacity.

AT THE CITY OF BLOOMINGTON, OUR GOAL IS TO PROVIDE you with high quality, safe, reliable drinking water that meets every federal and state water quality requirement. This report contains information about the sources, treatment process and history of our water system. On page four, we provide a summary of the results of water quality tests on Bloomington’s water sources performed throughout 2004 by the Minnesota Department of Health, the City of Minneapolis and our own laboratories. We have also tried to answer some of the most common questions that people have about our water.

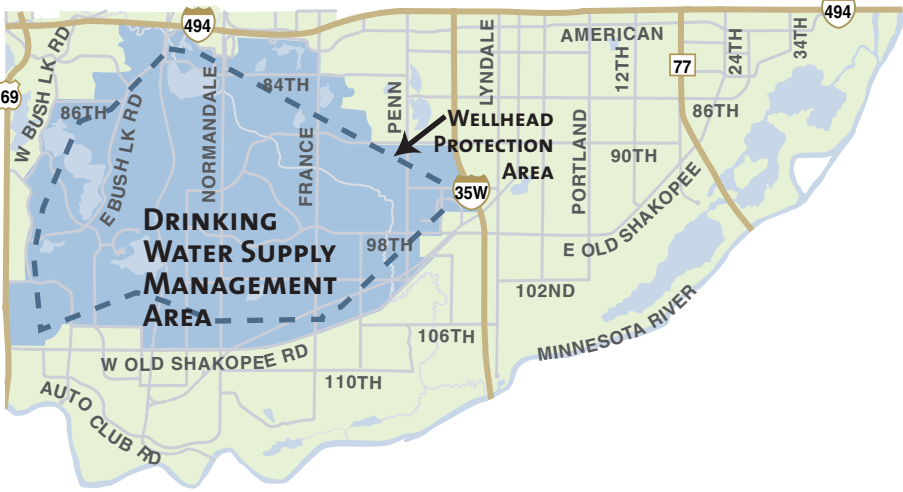
## PROTECT THE WELLHEAD!

### PROGRAM DEVELOPS PLAN TO PREVENT POLLUTION

THE MINNESOTA DEPARTMENT OF HEALTH is working with communities and state and local agencies to protect public wells that supply drinking water. This cooperative effort is called the Wellhead Protection Program (WHPP). The goal of this program is to help prevent pollution of public water supply wells across Minnesota. The first step in a wellhead protection effort is to find where all the water comes from that supplies the well(s). Once identified, possible sources of pollution are documented in this area and the community develops a plan to manage them so they will not threaten drinking water.

Part I of the Bloomington WHPP was submitted to the Minnesota Department of Health and approved in August 2002. The Wellhead Protection and Drinking Water Supply Management Areas (*see above*) were delineated and a vulnerability assessment for the wells and aquifers within these areas was made.

Part II of the program was approved in January 2004. Broken down into seven chapters, Part II of the WHPP details the program and the approaches taken to address potential contamination sources that have been



identified as potentially affecting the aquifer used by the public water supply.

Bloomington is fortunate that the majority of the Wellhead Protection Area is located in residential developments. Primary concerns in these residential areas are on-site sewage disposal systems and private wells. City staff will continue to minimize these potential sources of groundwater contamination by removing and remediating on-site septic systems per City of Bloomington ordinance and by using the Minnesota Delegated Well Program to ensure proper well construction, usage and abandonment of private wells.

Wellhead protection is a way to prevent drinking water from becoming polluted by managing possible sources of contamination in the area that supplies water to our public wells. Safeguarding our water supply is an ongoing need for our community. Everyone has an important part to play in protecting drinking water wells – today and for the future. *See sidebar.*

A copy of Bloomington’s Wellhead Protection Plan, Parts I and II, are available for review by contacting Glen Gerads at 952-563-8775 or e-mailing ggerads@ci.bloomington.mn.us.

## GET INVOLVED

THE PUBLIC WORKS DEPARTMENT works hard to ensure that your water meets all federal, state and local guidelines. Your input on water quality issues is welcome. For information, contact Water Quality Supervisor Jon Eaton at 952-563-4501.

If you have questions about your water, or if we can be of service in any way, please give us a call or visit the City’s Web site.

**Water Plant (24 hours a day)**  
**952-563-4905**  
TTY (8 a.m. to 4:30 p.m., M-F)  
952-563-8740  
City Web site:  
[www.ci.bloomington.mn.us](http://www.ci.bloomington.mn.us)

**Este informe contiene  
información muy importante.  
Tradúscalo o hable con un amigo  
quien lo entienda bien.**

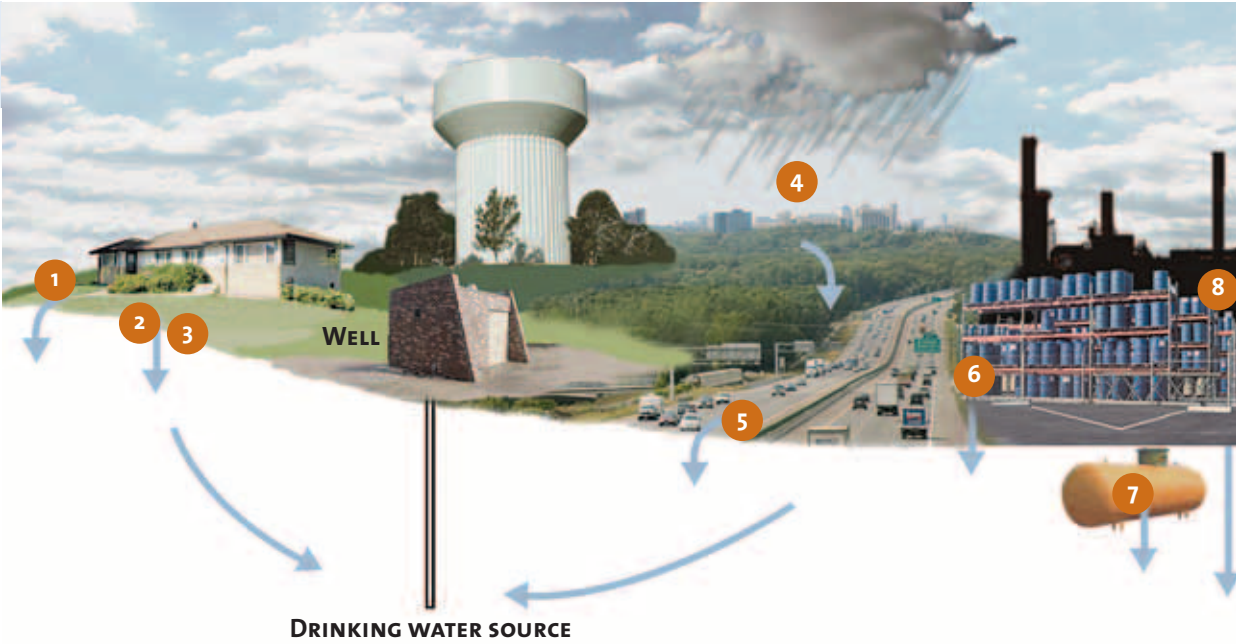
## YOU CAN HELP SAFEGUARD WATER

Recognize and manage all possible sources of pollution on your property. Street litter, motor oil, anti-freeze, pesticides, herbicides, fertilizers, yard and pet waste, household hazardous wastes and paint are a few pollutants that find a way into the drinking water source. *See right* for possible sources of water pollution.

Use hazardous products as directed and dispose of them properly. Questions on proper disposal can be directed to Hennepin County at 612-348-3777.

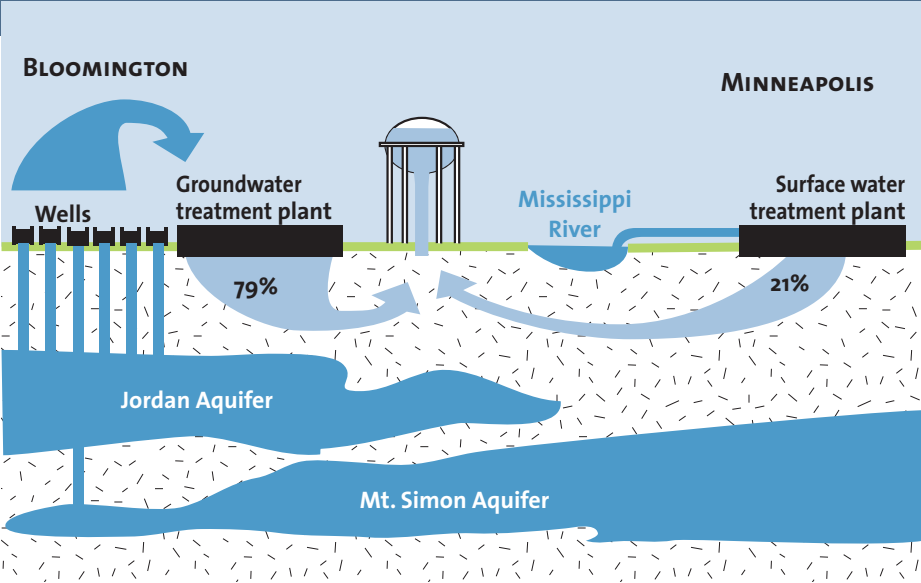
### POSSIBLE SOURCES OF WATER POLLUTION

- 1 Pesticides, fertilizers
- 2 Septic tanks
- 3 Unused wells
- 4 Surface runoff
- 5 Street runoff
- 6 Fuel, chemical storage
- 7 Underground gas tanks
- 8 Dumps, hazardous waste





## WHERE DOES YOUR TAP WATER COME FROM?



WITH THE REMODELING OF THE SAM H. Hobbs Water Treatment Plant completed, the City is now able to produce fourteen million gallons of treated, drinkable water per day – doubling its capacity.

### BLOOMINGTON WELLS 79 PERCENT IN 2004

In 2004, our water plant drew raw (untreated) groundwater from six deep wells. The wells extend downward between 376 and 963 feet into the Jordan and Mount Simon aquifers; porous underground rock formations that hold vast amounts of water.

We drew 3.6 billion gallons of water, 79 percent of our City's needs, from these deep groundwater wells in 2004.

### MISSISSIPPI RIVER 21 PERCENT IN 2004

To meet demand in excess of our production capabilities, we purchased treated water from the City of Minneapolis. Treated water from our plant is blended with similarly treated water from Minneapolis and sent throughout our City's distribution system. All of our consumers receive a blend of water from these two sources.

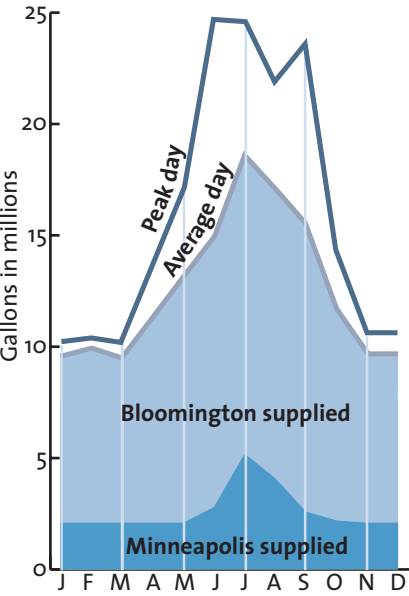
Minneapolis' surface water treatment plant takes its raw water from the Mississippi River. In 2004, the City purchased 972 million gallons of water from Minneapolis, which supplied the remaining 21 percent of our water needs.

## HOW MUCH IS USED?

IN 2004, RESIDENTS AND BUSINESSES in Bloomington used 4.6 billion gallons of water, down from 5.0 billion in 2003. This works out to about 12.6 million gallons of water per day last year.

The chart below shows the peak day and average day of water use for each month during 2004, as well as the average amount of water treated at our plant and purchased from Minneapolis. To get a more accurate picture of the actual amounts of water consumed, peak day data was adjusted to account for fluctuations in our reservoir levels.

### 2004 PEAK DAY AND AVERAGE DAY WATER USE PER MONTH



## THE TREATMENT PROCESS

**1** Treatment begins when lime, in the form of slakened quicklime (CaO), is mixed with raw water in one of our two solids contact basins. Each basin holds about half a million gallons of water.

**2** The lime and water mixture causes the pH in the water to rise, and calcium and magnesium (the main components of hardness) to form insoluble particles called flocs. As these floc particles grow in size, they settle to the bottom of the solids contact basins. The solids are removed, dewatered and used as a USDA-approved source of lime by Minnesota farmers to stabilize the pH in farm fields.

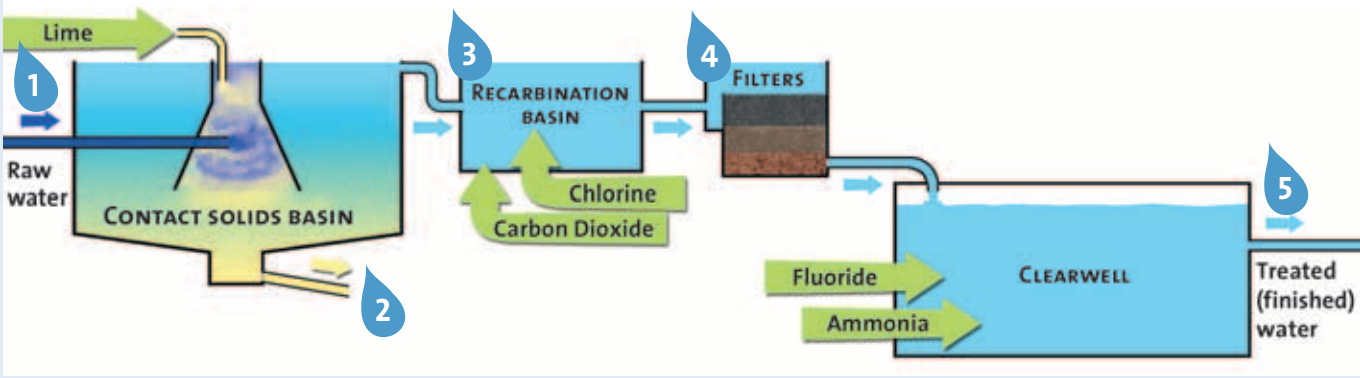
**3** The water enters a recarbonation basin where it is adjusted to the proper pH by adding carbon dioxide. A precise amount of chlorine is added to discourage bacterial growth as the water travels through our distribution system.

**4** The water is filtered to remove any remaining particles. And finally, it enters an underground reservoir called a clearwell where a small quantity of fluoride and ammonia are added. Fluoride promotes strong teeth and bones; ammonia works with the chlorine as a disinfectant. Now softened and disinfected, the water is ready for use by Bloomington residents and businesses.

## HOW SOFT IS OUR WATER?

Bloomington is one of the few water utilities in Minnesota that supplies softened water to its consumers. Untreated groundwater water enters the water plant plant with a hardness of about 19 grains (320 parts per million). Our treatment process reduces the water's hardness to about 5.2 grains (90 parts per million).

**5** The finished water from our treatment plant is pumped into the distribution system, where it is mixed with treated water purchased from the City of Minneapolis.



Nearly 97 percent of the world's water is saltwater or otherwise undrinkable. Another 2 percent is held in ice caps and glaciers. That leaves just one percent for all of humanity's needs – agricultural, residential, manufacturing and community needs.

United States Geological Survey



## A CAREER IN THE WATER INDUSTRY IS WAITING FOR YOU!

ST. CLOUD TECHNICAL COLLEGE'S WATER Environment Technologies (WETT) program provides you with the skills you need to land a great job in this rapidly growing industry.

There are many benefits to this program:

- Hands-on learning.
- 12 month program.
- Metro and St. Cloud location.
- 100 percent placement rates.

CALL ST. CLOUD TECHNICAL COLLEGE  
1-800-222-1009, EXT. 5952

FAQs: FREQUENTLY ASKED QUESTIONS ABOUT BLOOMINGTON’S WATER



WHY IS THE WATER FROM MY FAUCET CLOUDY?

OCCASIONALLY WE RECEIVE CALLS reporting water that appears cloudy or milky. Usually indicating the presence of either oxygen or calcium, cloudy water is perfectly safe to drink.

**Oxygen in water:** Sometimes water fresh from the tap appears cloudy. Within a minute or two, the cloudiness rises toward the top of a glass and before long the whole glass is crystal clear. This is caused by excess oxygen escaping from the water.

Changes in water temperature and pressure can cause the oxygen dissolved in it to reach a “supersaturated” state where more oxygen is in the water than it can hold. When the water passes through a faucet, the disturbance is enough to knock the oxygen out of the water, forming microscopic bubbles. The bubbles are so tiny that it takes them a long time to rise through the water. No harm will come from using oxygenated water and you need not take any corrective action if you experience it.

**Calcium in water:** When calcium causes cloudiness, it is usually noticed in cold water. Let a glassful of the cloudy water sit for about thirty minutes and a white or grayish substance may settle to the bottom of the glass. The substance is calcium, a product of our water treatment process. Such water is perfectly safe to drink or use for cooking, though it may be unappealing to look at.

The chemistry of water is surprisingly complex and many factors influence how it behaves. We treat Bloomington’s water so that it is slightly prone to deposit a trace of calcium sediment as it travels through our distribution system. This helps to keep our water from becoming corrosive and reduces the likelihood that it might attack our water mains or leach lead or copper from our customers’ plumbing and fixtures. *See What can I do to minimize exposure to lead in water?* Usually, this calcium sediment remains at the bottom of the water mains, unnoticed by our water users.

However, the calcium can be stirred up when a large volume of water is drawn through a water main in a short time. Events that can increase water velocity include firefighting, main breaks, hydrant maintenance and water or street cleaning trucks filling their tanks at a hydrant. If you happen to turn on your cold water right after such an event, you may draw some of the stirred-up water into your pipes.

To clean calcium sediment from your system, we recommend that you wait for an hour or two to allow the water in the main to settle. Then open a large-bore faucet, such as a tub faucet, and let the cold water run for about 20 minutes. This will draw clean water through your system and should remove any remaining calcium from your pipes. Please call us if you have any concerns about cloudy water or if your water remains cloudy after taking these steps.



WHAT CAN I DO TO MINIMIZE EXPOSURE TO LEAD IN WATER?

The presence of lead ranks among the most common health concerns people have about drinking water. Recent studies suggest that levels of lead once thought to be safe can in fact pose dangers, especially to unborn babies and children. Fortunately, over years of regular and rigorous monitoring, Bloomington’s water has never been found to be a significant source of lead.

In fact, lead pipes, solder, brass faucets and other plumbing in your home pose the greatest threat of adding dangerous levels of lead to your water. A few simple practices can minimize your exposure to lead from your home. First, always use cold water for your cooking and drinking. If your plumbing contains lead, hot water will draw more lead out of it. Second, allow your cold water to run until it runs very cold – a minute or more. This flushes out any water that may have been in your pipes long enough to pick up higher concentrations of lead. If you are concerned about your home’s lead levels, our laboratory can test your water for a fee.

**Water regulates the Earth’s temperature. It also regulates the temperature of the human body, carries nutrients and oxygen to cells, cushions joints, and protects organs and tissues. The human brain is 75 percent water. Human blood is 83 percent water and bones are 25 percent water.**



SHOULD I GET A WATER FILTRATION SYSTEM FOR MY HOME?

Because Bloomington’s water surpasses all federal and state standards, home filtration systems are not necessary. However, if you choose to purchase a filtration system for aesthetic or medical reasons, keep the following in mind:

- Choose a system that addresses your specific concerns. Find out if the type of filter you are considering is capable of removing substances that concern you.
- Look for filters that have been certified by NSF International (an independent testing group) and UL (Underwriters Laboratory).
- Follow the manufacturer’s maintenance instructions carefully. When not properly maintained and serviced, filtration systems can harbor disease-causing bacteria and may actually cause illness.

DO I NEED A HOME WATER SOFTENING SYSTEM?

Our lime-softening process removes most of the hardness in Bloomington’s water, reducing it from 19 grains per gallon (raw water) to about 5.4 grains per gallon (finished water). The water is also treated to be noncorrosive. This helps prevent unsafe levels of lead and copper from leaching into the water from home plumbing. Home softening systems can further reduce water hardness, usually by adding a small amount of sodium.

OTHER QUESTIONS?

Feel free to contact us at any time with your questions about drinking water. Our water plant’s telephone number is 952-563-4905.



IMPORTANT INFORMATION

FOR PEOPLE WITH COMPROMISED IMMUNE SYSTEMS

SOME PEOPLE MAY BE MORE VULNERABLE to contaminants in drinking water than the general population. Immuno-compromised people, such as people with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants, can be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline: 1-800-426-4791.

RADON IN WATER

RADON IS A RADIOACTIVE GAS THAT occurs naturally in some groundwater. It poses a stomach cancer risk when ingested and a lung cancer risk when released from water into the air during showering, bathing and washing dishes or clothes.

The EPA’s Maximum Contaminant Level for radon is 300 pCi/L. In tests of Bloomington’s water in 2004, our results are well below this limit.

Some states have adopted an Indoor Air Program that requires citizens to reduce radon in indoor air. Because radon in indoor air poses a much greater health risk than radon in drinking water, a more lenient “Alternate Maximum Contaminant Level” of 4000 pCi/L generally applies to water in those states. Minnesota is currently in the process of adopting such an Indoor Air Program.

For more information on radon, contact the Environmental Health Division at 952-563-8934 or go to the City’s Web site at [www.ci.bloomington.mn.us](http://www.ci.bloomington.mn.us), keyword: Radon.





## Water Purity

### Information provided by the U. S. Environmental Protection Agency

Drinking water sources in the United States, both tap water and bottled water, include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over or through the ground, it dissolves naturally occurring minerals and, sometimes, radioactive material. Water also picks up substances resulting from animal or human activity.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) regulates the amounts of certain contaminants in water provided by public systems. The Food and Drug Administration regulates contaminants in bottled water to provide the same public health protection.

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. Their presence does not necessarily indicate that the water poses a health risk. Information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

### Contaminants that may be present in source (“raw”) water

**Microbial contaminants**, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

**Inorganic contaminants**, such as salts and metals, can be naturally-occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

**Pesticides and herbicides** come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.

**Organic chemical contaminants**, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

**Radioactive contaminants** can be naturally occurring or be the result of oil and gas production and mining activities.

# Bloomington’s Water is Regularly Tested

## 2004 Water Quality Results

The Minnesota Department of Health (MDH) and our own staff regularly test samples of Bloomington’s water for over 140 contaminants. **No contaminants were detected at levels that exceeded the state or federal standards.** Some substances were detected in trace amounts below the maximum allowed in drinking water. Only those substances that were

detected appear on the following table; many test results are not listed because the substances were not found at any time in 2004 by tests designed to detect them. Tests for some substances are performed less than once per year; in such cases, the most recent results are reported along with the date of the test.

The upper portion of the table below summarizes results of tests

performed on Bloomington water. The lower portion shows results for water taken from the distribution system in Minneapolis because we blend their treated surface water with our water plant’s treated groundwater. All of Bloomington’s water is a blend of water from these two sources.

Detected substance	Amount detected	Allowed (MCL)	Ideal (MCLG)	Typical source of substance	Type	Meets standards?
City of Bloomington						
Bromodichloromethane (ppb)	0.2	NR	NR	Chlorination by-product	NR	Yes
Chlorine (ppm)	0.8 to 1.8	4 MRDL	4 MRDLG	Water additive used to control microbes	R	Yes
Chloroform (ppb)	0.7	NR	NR	Chlorination by-product	NR	Yes
Combined Radium(pCi/l) (03/21/2003)	0.21	5.4	0	Erosion of natural deposits	NR	Yes
Copper (ppm) (Sampled 08/27/2002)	0.26 (0 of 30 sites over AL)	AL= 1.3	NA	Corrosion of household plumbing systems; erosion of natural deposits	NR	Yes
Fluoride (ppm)	Avg. = 1.1 (1.0 to 1.1)	4	4	Added for strong teeth/bones; erosion of natural deposits	R	Yes
Lead (ppb) (Sampled 08/27/2002)	7.0 (1 of 30 sites over AL)	AL = 15	NA	Corrosion of household plumbing systems; erosion of natural deposits	R	Yes
Sodium (ppm)	4.4	NR	NR	Erosion of natural deposits	NR	Yes
Sulfate (ppm)	5.3	NR	NR	Erosion of natural deposits	NR	Yes
Trihalomethanes (TTHM) (ppb)	Avg. = 12 (0.4 to 0.9)	80	0	Chlorination by-product	R	Yes
City of Minneapolis						
Alpha Emitters (pCi/L) (04/17/2002)	0.4	15	0	Erosion of natural deposits	R	Yes
Chlorine (ppm)	Avg. = 2.7 (1.8 to 3.3)	4 MRDL	4 MRDLG	Water additive used to control microbes	R	Yes
Copper (ppm)	0.21 (0 of 50 sites over AL)	AL = 1.3	NA	Corrosion of household plumbing systems; erosion of natural deposits	R	Yes
Fluoride (ppm)	Avg. = 1.1 (1 to 1.3)	4	4	Added for strong teeth/bones; erosion of natural deposits	R	Yes
Haloacetic Acids (HAA) (ppb)	Avg. = 20.09 (7.1 to 23.7)	60	0	Chlorination by-product	R	Yes
Lead (ppb)	7 (4 of 50 sites over AL)	AL = 15	NA	Corrosion of household plumbing systems; erosion of natural deposits	R	Yes
Nitrate (as Nitrogen) (ppm)	0.16	10	10	Fertilizer runoff; leaching of septic or sewer; erosion of natural deposits	NR	Yes
Sodium (ppm)	8.9	NR	NR	Erosion of natural deposits	NR	Yes
Sulfate (ppm)	23	NR	NR	Erosion of natural deposits	NR	Yes
Trihalomethanes (TTHM)	Avg. 26 (8 to 32)	80	0	Chlorination by-product	R	Yes
Turbidity (NTU)	Max: 0.28 (limit met 100%)	TT	NA	Soil runoff	R	Yes
Total Coliform	1%	5%	0	Bacteria naturally present in the environment	R	Yes
Detected substance	Amount detected	Allowed (MCL)	Ideal (MCLG)	Typical source of substance	Type	Meets standards?

### Key

<b>MCL</b>	<b>Maximum Contamination Level.</b> The highest level allowed in drinking water. MCLs are set as close to MCLG as feasible using the best available treatment technology.	<b>R</b>	<b>Regulated.</b>
		<b>NA</b>	<b>Not Applicable.</b>
		<b>AL</b>	<b>Action Level.</b> An amount that, if exceeded, triggers a specific response that a water system must follow.
<b>MCLG</b>	<b>Maximum Contamination Level Goal.</b> Below this level there is no known or expected health risk. MCLGs allow for a margin of safety.	<b>TT</b>	<b>Treatment Technique.</b> A required process intended to keep the level of a contaminant at an acceptably low level.
<b>NR</b>	<b>Not Regulated</b> , but monitoring is required by the State of Minnesota. No limits have been set for this compound.	<b>ppb</b>	<b>Parts Per Billion.</b> Units of a substance, in pure form, found in every billion units of water.

<b>ppm</b>	<b>Parts Per Million.</b> Units of a substance, in pure form, found in every million units of water.
<b>NTU</b>	<b>Nephelometric Turbidity Unit.</b> A measure of water clarity.
<b>pCi/L</b>	<b>Picocuries Per Liter.</b> Measures radioactivity.
<b>MRDL</b>	<b>Maximum Residual Disinfectant Level.</b>
<b>MRDLG</b>	<b>Maximum Residual Disinfectant Level Goal.</b>